

## CLAIMS

1. A method of data packet handling in packet-switched data transmission between a mobile station and a wireless telecommunication network, wherein a telecommunication protocol of said wireless telecommunication network comprises a link control layer for handling control information relating to the data packet transmission and a radio link layer for transmitting the data packets as data units and for acknowledging the transmission between the mobile station and the wireless telecommunication network, the method comprising
  - receiving a plurality of radio link layer data units on the radio link layer;
  - transferring a number of the radio link layer data units to the link control layer as link control layer data units;
  - detecting a high load situation caused by the transfer of the link control layer data units to the link control layer; and
  - intermitting the operation of the radio link layer until a number of link control layer data units has been acknowledged by the link control layer.
2. A method as claimed in claim 1, further comprising
  - setting a first threshold value for limiting the number of link control layer data units transferred to the link control layer without acknowledgement from the link control layer;
  - setting a second threshold value for the number of the link control layer data units to be acknowledged by the link control layer; and
  - if the number of unacknowledged link control layer data units equals to the number defined by the first threshold value,
  - intermitting the transfer of the link control layer data units, until a number of link control layer data units, defined by the second threshold value, has been acknowledged by the link control layer.
3. A method as claimed in claim 2, further comprising
  - performing said acknowledgement from the link control layer in response to transferring said link control layer data units to an upper protocol layer.
4. A method as claimed in claim 3, wherein the upper protocol layer is a convergence protocol layer.
5. A method as claimed in claim 1, further comprising

in response to intermitting the transfer of the link control layer data units to the link control layer,

intermitting the acknowledgements of radio link layer data units on radio link layer between the mobile station and the wireless telecommunication network.

5 6. A method as claimed in claim 1, further comprising  
including an acknowledgement request in at least one link control layer data unit to be transferred to the link control layer, the transferring of which link control layer data unit starts a timer; and  
10 in response to said timer expiring before an acknowledgement is received from the link control layer,  
intermitting the transfer of the link control layer data units, until acknowledgement of a predefined number of link control layer data units is received from the link control layer.

15 7. A method as claimed in claim 6, further comprising  
in response to intermitting the transfer of the link control layer data units to the link control layer,  
intermitting the acknowledgements of radio link layer data units on radio link layer between the mobile station and the wireless telecommunication network.

20 8. A packet-switched telecommunication system comprising a mobile station and a wireless telecommunication network, wherein  
a telecommunication protocol of said telecommunication system comprises a link control layer for handling control information relating to the data packet transmission and a radio link layer for transmitting the data packets as data units and for acknowledging the transmission between the mobile station and the wireless telecommunication network,

the network is arranged to transmit a plurality of radio link layer data units to the mobile station on the radio link layer;

30 the mobile station is arranged to transfer a number of the radio link layer data units to the link control layer as link control layer data units;

detect a high load situation caused by the transfer of the link control layer data units to the link control layer; and

intermit the operation of the radio link layer until a number of link control layer data units has been acknowledged by the link control layer.

9. A mobile station of a telecommunication system, wherein a packet-switched telecommunication protocol of said telecommunication system comprises a link control layer for handling control information relating to the data packet transmission and a radio link layer for transmitting the data packets as data units and for acknowledging the transmission between the mobile station and a wireless telecommunication network, the mobile station comprising

5 a receiver for receiving a plurality of radio link layer data units on the radio link layer from the wireless telecommunication network;  
10 means for transferring a number of the radio link layer data units to the link control layer as link control layer data units;  
means for detecting a high load situation caused by the transfer of the link control layer data units to the link control layer; and  
means for intermitting the operation of the radio link layer until a  
15 number of link control layer data units has been acknowledged by the link control layer.

10. A mobile station as claimed in claim 9, further comprising  
means for defining a first threshold value for limiting the number of link control layer data units transferred to the link control layer without  
20 acknowledgement from the link control layer;  
means for defining a second threshold value for the number of the link control layer data units to be acknowledged by the link control layer; and  
means, responsive to the number of unacknowledged link control layer data units being equal to the number defined by the first threshold value,  
25 for intermitting the transfer of the link control layer data units, until a number of link control layer data units, defined by the second threshold value, has been acknowledged by the link control layer.

11. A mobile station as claimed in claim 10, further comprising  
means for performing said acknowledgement from the link control  
30 layer in response to transferring said link control layer data units to an upper protocol layer.

12. A mobile station as claimed in claim 11, wherein the upper protocol layer is a convergence protocol layer.

13. A mobile station as claimed in claim 9, further comprising  
35 means, responsive to intermitting the transfer of the link control layer data units to the link control layer, for intermitting the acknowledgements of radio

link layer data units on radio link layer between the mobile station and the wireless telecommunication network.

14. A mobile station as claimed in claim 9, further comprising  
a timer, the start of which is responsive to a transfer of a link control  
5 layer data unit including an acknowledgement request to the link layer;  
means for transferring a number of the link control layer data units  
to the link control layer, at least one link control layer data unit including an  
acknowledgement request; and  
means for intermitting the transfer of the link control layer data  
10 units, if said timer expires before an acknowledgement is received from the  
link control layer, until acknowledgement of a predefined number of link  
control layer data units is received from the link control layer.

15. A mobile station as claimed in claim 14, further comprising  
means, responsive to intermitting the transfer of the link control  
15 layer data units to the link control layer, for intermitting the acknowledgements  
of radio link layer data units on radio link layer between the mobile station and  
the wireless telecommunication network.

16. A computer software product, suitable for execution in a mobile  
station of a telecommunication system, wherein a packet-switched  
20 telecommunication protocol of said telecommunication system comprises a  
link control layer for handling control information relating to the data packet  
transmission and a radio link layer for transmitting the data packets as data  
units and for acknowledging the transmission between the mobile station and  
a wireless telecommunication network, the computer software product  
25 comprising

software code for transferring a number of the radio link layer data  
units, received from the wireless telecommunication network, to the link  
control layer as link control layer data units;

- 30 software code for detecting a high load situation caused by the  
transfer of the link control layer data units to the link control layer; and

software code for intermitting the operation of the radio link layer  
until a number of link control layer data units has been acknowledged by the  
link control layer.

17. A computer software product as claimed in claim 16, further  
35 comprising

software code for defining a first threshold value for limiting the number of link control layer data units transferred to the link control layer without acknowledgement from the link control layer;

5 software code for defining a second threshold value for the number of the link control layer data units to be acknowledged by the link control layer; and

software code, responsive to the number of unacknowledged link control layer data units being equal to the number defined by the first threshold value, for intermitting the transfer of the link control layer data units, until a number of link control layer data units, defined by the second threshold value, has been acknowledged by the link control layer.

18. A computer software product as claimed in claim 17, further comprising

15 software code for performing said acknowledgement from the link control layer in response to transferring said link control layer data units to an upper protocol layer.

19. A computer software product as claimed in claim 16, further comprising

20 software code, responsive to intermitting the transfer of the link control layer data units to the link control layer, for intermitting the acknowledgements of radio link layer data units on radio link layer between the mobile station and the wireless telecommunication network.

20. A computer software product as claimed in claim 16, further comprising

25 a timer carried out as software code, the start of which is responsive to a transfer of a link control layer data unit including an acknowledgement request to the link layer;

30 software code for transferring a number of the radio link layer data units, received from the wireless telecommunication network, to the link control layer as link control layer data units, at least one link control layer data unit including an acknowledgement request; and

software code, responsive to expiration of said timer before an acknowledgement is received from the link control layer, for intermitting the transfer of the link control layer data units, until acknowledgement of a predefined number of link control layer data units is received from the link control layer.

21. A computer software product as claimed in claim 20, further comprising

software code, responsive to intermitting the transfer of the link control layer data units to the link control layer, for intermitting the  
5 acknowledgements of radio link layer data units on radio link layer between the mobile station and the wireless telecommunication network.